



Settling Efficiency of Urban Particulate Matter Transported by Stormwater Runoff

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ABSTRACT

The main purpose of control measures for the pollution reduction in urban area is to detain particulate matter (PM) washed off by stormwater from impermeable surfaces. One of the mainly used process in these units is sedimentation. Experimental tests (settling column tests) have been performed to examine the settling efficiency (E), using mono-disperse and hetero-disperse PM, for which the particle size distribution (PSD) has been measured and modelled by a cumulative gamma distribution. In order to investigate the dependence of E from the PM, a variant of the Evolutionary Polynomial Regression (EPR), a MS – Excel function based on Multi-Objective EPR technique (EPR-MOGA), called EPR MOGA XL, has been used as data-mining strategy. The results from this study show that E is a function of the initial total suspended solids (TSS) concentration and of the d_{50} index, obtained from the PSDs of the samples.

KEYWORDS

Column settling tests, settling efficiency, PSD, gamma distribution